

Hammersmith Bridge – Temporary Vehicle Bridge

Beckett Rankine Proposal

This is to construct a temporary bridge adjacent to Hammersmith Bridge to allow motorised traffic to cross the River Thames until the main structure can be restored. They have indicated that it would be suitable for cars, vans and buses.

The TfL project team have analysed their proposal and this is provided below in the note below.

About the TfL team analysing the proposal:

TfL have an experienced project team consisting of chartered civil engineers with extensive experience of bridge works, both permanent and temporary and installation of structures in River Thames. The team also has recent experience with Rotherhithe to Canary Wharf Crossing. Furthermore, our structures engineering team has extensive design experience of bridges.

They have drawn on the experience within TfL of personnel from the various teams for heritage, legal, and consents. There is also a traffic modelling team and highways engineering team available.

The TfL project team has also engaged with external specialists. In June 2019, discussions commenced with three temporary bridge installers: Mabey, Janson and Dawson Wam and a principal contractor, Bam Nuttall. TfL's designers for the concept design, Pell Frischmann, have also been involved.

In August 2019 the project team commenced discussions with Port of London Authority (PLA) and Environment Agency (EA) for installation of a temporary pedestrian and cycle bridge.

Analysis of the Beckett Rankine proposal:

We agree with:

- (a) their selection of the general location of the temporary bridge
- (b) minimum width of their proposed structure
- (c) height of structure to match clearances of Hammersmith Bridge.

However, the proposal fails in a number of substantive areas

Within River

- (i) The Beckett Rankine proposal has bridge spans of 40m with piers located within the main river (navigable) channel. For safety of river traffic the PLA require the main river channel to be free of any piers with a bridge span of 80m. This span isn't achievable using the proposed Retro Heavy Bridge put forward by Beckett Rankine, which has spans of up to 51m. TfL has looked at Retro Bridge's other solutions that would support a longer span (the Retro Panel Bridge or Retro Long Span Bridge), although these only provide for up to 76.2m. Furthermore, the

loading will need to be assessed to understand what each bridge type can achieve.

- (ii) They have located a pier within the north bank foreshore which the EA have indicated would be unacceptable, as this would create significant impacts to habitat and wildlife.
- (iii) Two Piers, on their proposal, are currently shown to be positioned within the navigational channel and how they are aligned to the existing bridge would cause issues for vessels navigating the river and lining up the high point of the bridge in the centre.
- (iv) To gain consent from PLA and EA this would need the following information:
 - a. Ground investigations and boreholes of the river bed
 - b. Bathymetric survey
 - c. 3D model and Hydrodynamic model
 - d. Navigational risk assessment and simulation
 - e. Scour assessment
 - f. Flood risk assessment
- (v) The number of piers proposed would potentially lead to significant technical issues which are to be assessed by the above methods described in item (iv).

A plan of the proposed location of the bridge is shown in Appendix A with areas highlighted showing these issues. The plan is based on the information supplied directly from Beckett Rankine.

Southern (Richmond) side

- (i) It is not clear how pedestrians would access the bridge from the southern end, as the temporary bridge footway abruptly ends without linking into any surrounding infrastructure.
- (ii) There is insufficient space between the temporary bridge and the main bridge at the south-east pedestal. This pedestal requires significant work and therefore to enable this a minimum of 2m clearance is necessary.
- (iii) The access to the south-east anchorage is a man hole currently situated in the pavement. The Beckett Rankine proposal would mean it would be located within the carriageway. Regular access to this (three times a week) is required and could only be done with a closure of this temporary bridge.
- (iv) Junction of Castelnau and Riverview Gardens would need to be remodelled or stopped-up
- (v) Given items (i) and (ii) we believe that the alignment of the temporary vehicle bridge needs to be shifted approximately 4m to the east. This would require the purchase and partial demolition of the private property.

Northern (Hammersmith) Side

- (i) Landing point affects an operational wharf which would have to be purchased or an agreement reached to suspend its use.
- (ii) Unclear how Thames Path is directed past the temporary bridge. The Thames Path would either have to be suspended or the temporary bridge would have to oversail the path requiring a substantial abutment and off-ramp.

- (iii) Road at location of landing point is narrower than minimum acceptable – requiring suspension of residents’ parking and road widening. In addition, the landing point would be in very close proximity to Riverside Studios.
- (iv) Proposal does not indicate route beyond landing point. TfL have identified two possible routes. Each would need substantial highway works, junction works and traffic modelling:

Route 1. Along Queen Caroline Street to Hammersmith Gyrotory: the gyrotory does not have the capacity to handle the additional traffic without adversely affecting the surrounding roads, including Fulham Palace Road.

Route 2. Halfway along Queen Caroline Street, along Worlidge Street and back onto Hammersmith Bridge Road: Queen Caroline Street and Worlidge Street are both residential roads. The parking bays for residents would need to be relocated.

Appendix B shows a plan of the two routes and includes images of key areas along each route

Planning Permission

Both planning authorities for Richmond and Hammersmith & Fulham require full planning applications to be issued to them, this would typically take over 10 months to submit and acquire due to various licenses that will also be required i.e. River works, MMO and dredging. This note does not attempt to assess the level of support for the proposed temporary bridge from local residents, but does highlight a number of issues which are pertinent e.g. loss of parking, proximity to adjacent properties, etc.

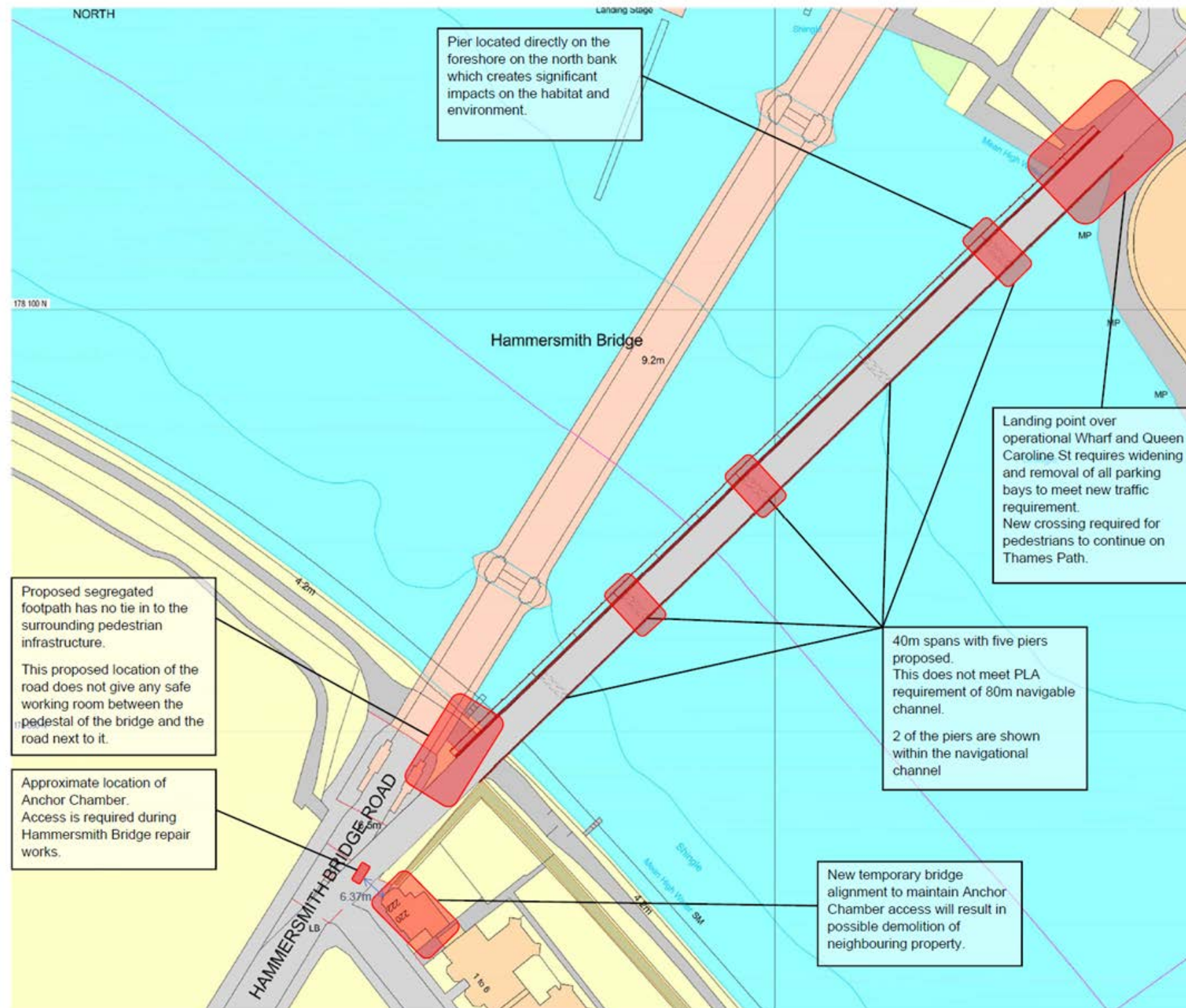
Planning consent cannot be sought until the final design is produced and PLA and EA have accepted the plan.

Programme and Cost

Given the above, the estimated cost of £5m and three month programme supplied by Beckett Rankine is unrealistic.

At this stage an indicative cost range of £30m to £50m and a programme of 18 to 24 months would appear more realistic.

Appendix A: Plan of Bridge with highlighted areas of concern



Appendix B: Plan of proposed bridge and connecting roads.



Image 1: Junction between Queen Caroline Street and Hammersmith Gyratory

Image 2: Junction between Worlidge Street and Hammersmith Bridge Road

Image 3: General view along Queen Caroline Street

Image 4: North bank landing point with operational wharf and Riverview Studios

Image 5: South bank landing point with adjacent property & junction of Riverview Gardens and Castelnau